

CLAIMS

- [c1] 1. A method in a computer system for establishing a path between a source node and a destination node, the method comprising:
identifying ports of switches forming a path between the source node and the destination node, each switch of the path having a source-side port and a destination-side port;
identifying a virtual address for sending data from the source node to the destination node such that the virtual address is not currently used by any of the source-side ports; and
setting each of the source-side ports to switch data sent to the identified virtual address through the destination-side port of its switch.
- [c2] 2. The method of claim 1 including:
identifying a virtual address for sending data from the destination node to the source node such that the virtual address is not currently used by any of the destination-side ports; and
setting each of the destination-side ports to switch data sent to the identified virtual address through the source-side port of its switch.
- [c3] 3. The method of claim 1 wherein each port of each switch has a virtual address table for mapping virtual addresses to another port of the switch.
- [c4] 4. The method of claim 1 wherein when data is received at a port of a switch, the virtual address of the data is used to retrieve an indication of another port and the data is sent out of the switch through the other port.

- [c5] 5. The method of claim 1 wherein a path is established between the source node and each of a plurality of destination nodes by identifying ports of switches for each path.
- [c6] 6. The method of claim 1 wherein the data is a Fibre Channel frame.
- [c7] 7. The method of claim 1 wherein the switches are Fibre Channel compatible.
- [c8] 8. The method of claim 1 wherein the switches are interconnect fabric modules.
- [c9] 9. The method of claim 1 wherein when a port of a switch receives data with a virtual address that has not been set for the port, the port does not forward the data.
- [c10] 10. A method for establishing a path between a source node and a destination node through a network of routing devices, the method comprising:
identifying ports of routing devices forming a path between the source node and the destination node, each routing device of the path having an identified source-side port and an identified destination-side port;
identifying a virtual address for sending data from the source node to the destination node; and
setting each of the identified source-side ports to route data sent to the identified virtual address through the identified destination-side port of its routing device.
- [c11] 11. The method of claim 10 including:
identifying a virtual address for sending data from the destination node to the source node; and

setting each of the identified destination-side ports to route data sent to the identified virtual address through the identified source-side port of its routing device.

[c12] 12. The method of claim 10 wherein a routing device is a switch.

[c13] 13. The method of claim 10 wherein each routing device has a virtual address table for mapping virtual addresses to another port of the routing device.

[c14] 14. The method of claim 10 wherein when data is received at a port of a routing device, the virtual address of the data is used to retrieve an indication of another port and the data is sent out of the routing device through the other port.

[c15] 15. The method of claim 10 wherein a path is established between the source node and each of a plurality of destination nodes by identifying ports of routing devices for each path.

[c16] 16. The method of claim 10 wherein the data is a Fibre Channel frame.

[c17] 17. The method of claim 10 wherein the data is an InfiniBand frame.

[c18] 18. The method of claim 10 wherein the routing devices are interconnect fabric modules.

[c19] 19. The method of claim 10 wherein when a routing device receives data with a virtual address that has not been set for the routing device, the routing device does not forward the data.

[c20] 20. The method of claim 10 wherein the identified virtual address is not currently used by any of the identified source-side ports.

[c21] 21. The method of claim 10 wherein the identified virtual address is currently used by an identified source-side port when part of the path is shared by two source nodes sending data to the same destination node.

[c22] 22. The method of claim 10 including providing the identified virtual address to the source node for use in sending data to the destination node.

[c23] 23. A network manager for establishing a path between a source node and a destination node through a network of switches, comprising:
a component that identifies switches forming a path between the source node and the destination node;
a component that identifies a virtual address for sending data from the source node to the destination node through the identified switches;
and
a component that configures each of the identified switches to route data sent to the identified virtual address through the identified switches from the source node to the destination node.

[c24] 24. The network manager of claim 23 including:
a component that identifies a virtual address for sending data from the destination node to the source node; and
a component that configures each of the identified switches to route data sent to the identified virtual address through the identified switches from the destination node to the source node.

[c25] 25. The network manager of claim 23 including:
a component that identifies switches forming a path between the destination node and the source node.

[c26] 26. The network manager of claim 25 wherein the path from the source node to the destination node includes one port that is not in the path from the destination node to the source node.

[c27] 27. The network manager of claim 25 wherein the path from the source node to the destination node is different from the path from the destination node to the source node.

[c28] 28. The network manager of claim 23 wherein each switch has ports with a mapping of virtual addresses to another port of the switch.

[c29] 29. The network manager of claim 23 wherein when data is received at a port of a switch, the identified virtual address is used to retrieve an indication of another port of the switch through which the data is transmitted.

[c30] 30. The network manager of claim 23 wherein a path is established between the source node and each of a plurality of destination nodes by identifying ports of switches for each path.

[c31] 31. The network manager of claim 23 wherein the data is a Fibre Channel frame.

[c32] 32. The network manager of claim 23 wherein the data is an InfiniBand frame.

[c33] 33. The network manager of claim 23 wherein the switches are interconnect fabric modules.

[c34] 34. The network manager of claim 23 wherein when a port of a switch receives data with a virtual address that has not been set for the port, the port does not forward the data.

[c35] 35. The network manager of claim 23 wherein each switch has a source-side port and the identified virtual address is not currently used by any of the source-side ports.

[c36] 36. The network manager of claim 23 wherein each switch has a source-side port and the identified virtual address is currently used by a source-side port when part of the path is shared by two source nodes sending data to the same destination node.

[c37] 37. A network manager for establishing a path between a source node and a destination node through a network of routing devices, comprising:
means for identifying ports of routing devices forming a path between the source node and the destination node, each routing device of the path having an identified source-side port and an identified destination-side port;
means for identifying a virtual address for sending data from the source node to the destination node; and
setting each of the identified source-side ports to route data sent to the identified virtual address through the identified destination-side port of the routing device.

[c38] 38. The network manager of claim 37 including:
means for identifying a virtual address for sending data from the destination node to the source node; and
means for setting each of the identified destination-side ports to route data sent to the identified virtual address through the identified source-side port of the routing device.

[c39] 39. The network manager of claim 37 wherein a routing device is a switch.

[c40] 40. The network manager of claim 37 wherein each port of each routing device has a means for mapping virtual addresses to another port of the routing device.

[c41] 41. The network manager of claim 37 including means for, when data is received at a port of a routing device, retrieving an indication of another port using the identified virtual address and sending the data out of the routing device through the other port.

[c42] 42. The network manager of claim 37 including means for establishing a path between the source node and each of a plurality of destination nodes by identifying ports of routing devices for each path.

[c43] 43. The network manager of claim 37 wherein the data is a Fibre Channel frame.

[c44] 44. The network manager of claim 37 wherein the data is an InfiniBand frame.